PRELIMINAR VERSION/FIRST DRAFT – PLEASE DO NOT QUOTE!

Strategic Self-Ignorance

Linda Thunström, Jonas Nordström, Jason F. Shogren and Mariah Ehmke

Linda Thunström, HUI Research AB, 103 29 Stockholm, Sweden, and University of Wyoming, 1000 E. University Ave. Laramie, WY 82071, linda.thunstrom@hui.se

Jonas Nordström, Lund University, Box 117, 221 00 Lund, Sweden, jonas.nordstrom@nek.lu.se

Jason F. Shogren, University of Wyoming, 1000 E. University Ave. Laramie, WY 82071, jramses@uwyo.edu

Mariah Ehmke, University of Wyoming, 1000 E. University Ave. Laramie, WY 82071, mehmke@uwyo.edu

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1. Introduction

Would a person ever choose to ignore costless information? The rational answer is "no;" according to classical expected utility theory, the value of costless information is always non-negative (see e.g., Machina, 1989). A person should be no worse off gathering all available costless information. But the answer could be "yes" according to the idea of *strategic ignorance* (see for instance Dana et al., 2007). A person who ignores costless information does so to avoid any internal conflict about doing what he wants versus "doing the right thing" when the choice affects other people, i.e., how to split wealth given ideals of fairness. Strategic ignorance is assumed to arise when this conflict is severe enough for the person to want to avoid information on what he "should do" based on social norms (e.g., see, van der Weele, 2011, Larsson and Capra, 2009, and Dana et al., 2007).[1]

But would a person go so far as to ignore costless information about actions that impact his own future wellbeing? Herein we present evidence that again the answer can be "yes". A person can exercise *strategic self-ignorance*. In a struggle between how a person treats himself today versus his future selves¸ he can be inclined to ignore costless information to pursue immediate gratification. In the context of low- versus high-calorie food, we find laboratory evidence which suggests people exhibit strategic self-ignorance—many people choose to ignore free calorie-content information, and these people consume significantly more calories than the control group who was obligatorily exposed to the information.

Such strategic self-ignorance is consistent with the assumptions of what motivates the *present-bias* exhibited by many people (e.g., Laibson, 1997; Rabin and O'Donoghue, 2003). A person with present-bias has preferences with a higher discount rate between today and tomorrow than between any other time periods in the future. The idea is that he believes he *should* behave rationally (i.e., a constant utility discount rate over all time periods), but since his true preferences are present-biased, he puts too much emphasis on today's well-being. He

[1] Larsson and Capra, (2009) and Dana et al. (2007) both find that more than 50 percent of subjects are strategically ignorant, when ignorance is costless. Van der Weele (2011) finds that even when ignorance has to be actively chosen, more than 30 percent of subjects are strategically ignorant.

overinvests in actions that impose negative externalities on his future selves. We show such self-ignorance is bliss; by ignoring information on the potentially negative impact on his future wellbeing of present activities, a person with present-bias avoids the inner conflict between what he should and wants to do. He uses ignorance as an excuse to pursue his true preferences for immediate gratification.

2. Analytical framework of strategic self-ignorance

We now develop a model of *strategic self-ignorance*. Consider a person who is asked to choose between alternative A and B (e.g., two meals). Assume he knows his immediate utility from the two alternatives, and he knows he gets more immediate utility from alternative A. He also knows there is a chance his preferred meal is risky to his future self (e.g., too many calories, bad fatty acids, harmful pesticides). Before making this choice, however, suppose he is given the option to learn whether his preferred meal is in fact relatively more harmful. A rational person would use all costless information. If he finds out that his preferred meal is a healthy meal, he does nothing; if he learns his preferred meal is harmful, he adjusts his consumption decision—he either switches to his less preferred meal B or reduces the intake of his preferred meal A.

But would a person ever choose to ignore such costless information? The answer is “yes,” if this person suffers from self-control problems (i.e. has present biased preferences). He can benefit from ignoring costless information; this gives him an excuse to pursue his immediate self-interest In other words, a present-biased person can (1) benefit from being ignorant and (2) will use ignorance as an excuse to over consume harmful goods. Below we develop an analytical framework to illustrate those two points.

Following self-control models (e.g. Laibson, 1997; O’Donoghue and Rabin, 2003; Aronsson and Thunstrom, 2008), we define *present-biased* preferences as:

$$U_t = u_t + \beta \sum_{\tau=t+1}^{T} \theta^{\tau-t} u_\tau$$

where u_t is the immediate utility in period t, θ is a standard discount factor and $0<\beta<1$ represents a time-inconsistent preference for immediate gratification, i.e., the present-bias. A present-biased person is better off in the long run if he behaves rationally, i.e. assign an equal discount rate for all future time periods. But due to the present-bias, he is prone to immediate gratification—he prefers to overconsume harmful activities today, and as tomorrow comes, he makes the same choice to over-consume, and so on. Tomorrow's person discounts future utility more than today's self would prefer tomorrow's self to do.

Assume he consumes a meal (A or B) and a numeraire good (leisure) in each period. We normalize the price of both meals and the numeraire to unity. Let $x_{A,t}$ denote the level of calories from meal A in period *t*, and z_t is consumption of the numeraire. Also, assume he experiences future disutility from consuming 'unhealthy' food, i.e., too many calories. Let $x^{**}_{A,t}$, represent an exogenously given level of calories, e.g. a generally recommended level of calorie intake, or the utility maximizing level of calories the individual would have consumed if he had no present bias, i.e. $\beta = 1$. Further, assume if his preferred meal A is unhealthy but he does not know it, he will always over-consume, $x_{A,t} > x^{**}_{A,t}$. If his preferred meal A is healthy, he consumes the optimal level, $x_{A,t} = x^{**}_{A,t}$, even if he has a present bias (since there will be no negative future externality from today's consumption). Assume his immediate utility *under full information* at time *t* is

$$u_t = \rho \ln x_{A,t} - I\left[\beta\gamma \ln x_{A,t-1} + \alpha\left(\ln x_{A,t} - \ln x^{**}_{A,t}\right)\right] + z_t \qquad (1)$$

where *I=0* if meal A is healthy and *I=1* if meal A is unhealthy, $\gamma \ln x_{A,t-1}$ is the negative externality he imposes on himself if meal A is unhealthy, and $\beta < 1$ represents the present-bias.[2] The last term within brackets we define as "guilt". The guilt term reflects how he feels when he

[2] Following O'Donogue and Rabin (2003), assume the negative impact from unhealthy consumption goes one period forward.

learns he over-consumes calories, and α is the agent's sensitivity to experiencing guilt, and $0<\alpha$.[3] We assume that $\rho \geq \beta\gamma - \alpha$ holds for all consumers.

If he has no information on the calorie content of meal A, he has some (naïve) belief about the probability of meal A being unhealthy: $\delta = p + \varepsilon$, where p is the true probability that meal A is unhealthy. His instant utility from consuming meal A when *ignorant* is therefore

$$u_t = \rho \ln x_{A,t} - \delta\left[\beta\gamma \ln x_{A,t-1} + \alpha\left(\ln x_{A,t} - \ln x^{**}_{A,t}\right)\right] + z_t \tag{2}$$

At free information, he will choose to remain ignorant if his expected utility from being uninformed is higher than his expected utility from being informed. To illustrate our first point above, we make the simplifying assumption that $\gamma = 1$. For a person to benefit from being ignorant, the following condition would then have to be fullfilled

$$EU_t(uninformed) > EU_t(informed)$$

$$\rho ln x_{A,t} - (p+\varepsilon)\beta ln x_{A,t} - (p+\varepsilon)\alpha\left(\ln x_{A,t} - \ln x^{**}_{A,t}\right)$$
$$> \rho \ln x_{A,t} - p\left[\beta \ln x_{A,t-1} + \alpha\left(\ln x_{A,t} - \ln x^{**}_{A,t}\right)\right]$$

The above condition is fulfilled when $\beta > \alpha\left(\frac{ln x^{**}_{A,t}}{ln x_{A,t}} - 1\right)$, which will always hold true.

To illustrate our second point, i.e. that ignorance is used as an excuse to over consume harmful goods, we return to equations (1) and (2), respectively, and assume the following budget constraint $M = x_{A,t} + z_t$ at time *t*, in which M is the person's endowment of the numeraire in each period. Subject to the budget constraint, the *informed* person chooses the amount of the meal, $x_{A,t}$, and the amount of the numeraire, z_t , in period *t* that maximizes

[3] This term is equivalent to the term representing *cognitive dissonance* in Konow (2000), although Konow's model entails the dictator's cognitive dissonance and self-deception in allocation decisions over himself and others. Konow allows for the sensitivity to cognitive dissonance to vary over agents. Here, we assume all agents are equally sensitive to deviating from what they think they should do, which could be relaxed.

$u_t = \rho \ln x_{A,t} - I[\beta\gamma \ln x_{A,t} + \alpha(\ln x_{A,t} - \ln x^{**}_{A,t})] + z_t$, which yields the following demand functions for meal A

$x_{A,t}^{*info\ healthy} = \rho$ *if meal A is healthy*

and

$x_{A,t}^{*info\ unhealthy} = \rho - \beta\gamma - \alpha$ *if meal A is unhealthy*

Demand for the numeraire is given by $z_t^{*info} = B - x_{A,t}^{*\ info}$, where $x_{A,t}^{*\ info}$is equal to either $x_{A,t}^{*info\ healthy}$ or $x_{A,t}^{*info\ unhealthy}$.

If he is ignorant, he chooses $x_{A,t}$ and z_t to maximize

$u_t = \rho \ln x_{A,t} - \delta[\beta\gamma \ln x_{A,t} + \alpha(\ln x_{A,t} - \ln x^{**}_{A,t})] + z_t$ subject to the budget constraint, which yields the following demand function under ignorance $x_{A,t}^{*no\ info} = \rho - \delta(\beta\gamma - \alpha)$ and the numeraire $z_t^{*no\ info} = B - x_{A,t}^{*no\ info} = B - [\rho - \delta(\beta\gamma - \alpha)\ ]$.

Therefore, if meal A is unhealthy, a person will consume more under ignorance than under full information when $\rho - \delta(\beta\gamma - \alpha) > \rho - \beta\gamma - \alpha$, which is true as long as $\delta < 1$. I.e. *as long as the naïve belief of the probability of meal A being unhealthy is less than unity, the ignorant person will over consume meal A if meal A is unhealthy*. From the above demand functions, we also know that he will always under consume meal A under ignorance, if meal A is healthy.

We summarize our results in two null hypotheses:

> **Null hypothesis 1.** A person will always choose costless information on the impact of pleasurable present activities on future well-being.
>
> **Null hypothesis 2.** Ignorance does not lead to over consumption of harmful goods.

If we reject these hypotheses, the evidence will support the idea that people are strategically self-ignorant, i.e. that people choose ignorance to pursue immediate gratification.

3. Data and experimental design

In designing the experiment that tests for strategic self-ignorance, we use the design of experiments on strategic ignorance regarding the impact of one's actions on others as a basis, see Dana et al. (2007), Larsson and Capra (2009) and van der Weele (2011). Those experiments are dictator games where subjects are randomly matched into pairs; one dictator and one observer. Payments of both players are decided by the dictator. Dictators are asked to choose between two monetary outcomes, A or B, where A is more beneficial to the dictator but, with some probability, leads to a more negative outcome for the observer, relative to alternative B. Dictators are offered to know if the alternative that is more beneficial to them will be more unfair than the other alternative. The decisions are made anonymously, i.e. the observer does not know if the dictator chose to be ignorant, and that is known to the dictator.

Similarly, we can think of today's self as the dictator and tomorrow's self as the observer. However, to test strategic self-ignorance, we need a good that has a transparent instant utility but for which consumers cannot determine the impact on future utility (and therefore may gain something from choosing to be informed). Burton et al. (2006) show that people generally are unable to accurately determine the calorie content of ready-meals served away from home. If the meal consists of well-known sources of proteins and carbohydrates, people are likely to have an idea of the taste (immediate utility) of the meal, though. We therefore use ready-meals in our experiment. Another important difference from the above experiments on strategic ignorance is that when testing for strategic self-ignorance the decision of today's self will not be anonymous to one's future self. If anything, this should strengthen the incentive to choose information, in order to avoid feeling guilty about making a decision that is bad for one's future self.

150 subjects were recruited by a recruitment firm. The instructions were to recruit people in the Stockholm area of different ages, gender, education and income. For background characteristics of the subjects recruited, see Table 1. Vegetarians and people with food allergies were excluded from the recruitment for practical reasons. Subjects were told that they were going to participate in a survey during lunch hour and that lunch would be provided at site. They were also told that they would, privately, be measured and weighed.[4] The experiment lasted for an hour and subjects received a gift card worth SEK 400 (approximately USD 60) for participating. 148 subjects showed up to participate in the experiment, of which 55 were assigned to the control group and 93 to the treatment group.[5]

In line with the theoretical framework, we chose to limit the meal alternatives to two meals, both non-transparent in nutritional content.[6] The meal alternatives were a high-calorie meal: chicken and bulgur, containing 900 calories (equal to the average calorie content of fast food lunches, see Dumanovsky et al., 2009), and a low-calorie meal: roast beef and glass noodles (containing 490 calories).

Subjects participated in groups of between 15-20 and were reminded upon arrival that they had been recruited to fill in a survey. Subjects were asked not to communicate with each other during the session. The survey consisted of a set of questions on background characteristics, a set of

[4] The recruitment firm reported that the fact that subjects would be measured and weighed did not influence their willingness to participate in the study.

[5] *t*-tests revealed that background characteristics for the control group and the treatment group generally do not differ. There are no statistically significant differences, at the 10 percent level, of the mean values in the treatment and control group for the variables presented in Table, with one exception: at the 10 percent level, the proportion of subjects in the monthly income bracket of SEK 20,001-30,000 is significantly larger in the treatment group (0.333) than in the control group (0.204). **Compare the values in Table 1 to the national or Stockholm averages!**

[6] We needed to ensure that subjects did not a priori know which of the meal alternatives was low-calorie and which was high-calorie (i.e. subjects could not be presented with the alternatives salad and pizza, since it would be common knowledge that pizza contains more calories). In a focus group we singled out two meals that were particularly well-suited for the experiment. Even though a meal of chicken and bulgur contained as many as 900 calories, and a meal of roast beef and glass noodles contained as few as 490 calories, subjects in the focus group were not able to, a priori, determine which of the meals that was high-calorie and which was low-calorie.

questions on health, label knowledge, nutritional knowledge, and a set of questions on nutritional interest. The set of questions on nutritional knowledge and interest were based on the work by Grunert et al. (2010) and Roininen et al. (1999), and, along the lines of those studies, used to create indeces representing health interest and health knowledge.[7] The questions used to measure nutritional knowledge where multiple choice questions and correct answers were assigned 1 point while incorrect answers were assigned 0 points. All answers underlying the index was weighted equally. The questions measuring health interest consisted of a set of questions showing how important healthy eating is for the subject (on a scale from 1-7). The score on each question underlying the index was weighted equally.[8]

The outline and timing of the experiment were as follows:

Step 1. Subjects were told that they could choose between two lunches: a meal containing chicken and bulgur or a meal containing roast beef and glass noodles (portions of the lunch meals were displayed), of which one of the alternatives contained 900 calories and the other alternative 490 calories. Subjects were also informed that their preferred meal would have to be consumed at site.

Step 2. On individual sheets of paper, subjects were asked to rate (on a scale 1-5) the expected taste of the two meal choices (where 1 = tastes very bad and 5 = tastes very good) and thereafter state their choice of meal.

Step 3. Subjects in the *control group* were visually (on a sheet of paper) and verbally provided with information on which meal was high-calorie and which was low-calorie.

[7] For practical reasons we had to limit the number of questions on health knowledge and health interest in our study, though, relative to Grunert et al. (2010) and Roininen et al. (1999).

[8] For more information on how the indices are developed, please contact the corresponding author.

Subjects in the *treatment group* were asked to pick one of two folded sheets of paper in front of them: either the paper containing no calorie information, or the paper containing calorie information on the meals. Thereby, it was equally costly to choose not to know as it was to take part of information. To further reduce incentives to choose ignorance, the decision on whether or not to take part of information was visible to other subjects in the group.[9]

Step 4. Subjects were offered to revise their meal choice, based on the information they got (or, in the case of the treatment group, chose to get).

Step 5. Subjects were asked to complete the survey and eat the meal they had chosen.

Step 6. Subjects were individually weighed and measured (length and waist) in a separate room, and left-overs from subjects' meals were weighed.

Weighing the left-overs at Step 6 enabled (roughly) calculating the amount of calories consumed for each subject. For instance, calories consumed were calculated as follows for those who chose to eat the chicken and bulgur meal. The average weight of the chicken and bulgur meal was 500 grams. The number of calories per gram was therefore 900/500 =1.8 kcal/gram. The amount of

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[9] There is convincing evidence that anonymity decreases generosity in dictator games, while being observed by others increases generosity, see e.g. Hoffman, McCabe, and Smith (1996), Bohnet and Frey (1999), Andreoni and Bernheim, 2009, Andreoni and Petrie (2004), Soetevent (2005). Further, Data et al. 2006 and Broberg et al. 2007 show that subjects may even exit games with a smaller pay-off than the pay-off they would be able to choose for themselves in a game where they would split a financial amount between themselves and a recipient, since participating in the game, the dictator would feel obliged to give more. Assuming that being observed also increases the pressure to behave more in line with what one 'should do' for behavior that may not directly impact others, we would expect the probability of choosing information to increase from the fact that the decision is observable.

grams consumed (categorized by either 25, 50, 70, 85 or 100 percent) was estimated by subtracting the weight of the left-overs from the average meal weight (i.e. 500 grams for chicken and bulgur). The grams consumed were thereafter multiplied by 1.8, i.e. the number of calories per gram. The number of calories consumed for those who ate roast beef and glass noodles were calculated using the same formula, only the average weight of the roast beef and glass noodle meal was 340 grams, such that the number of calories per gram was 490/340, around 1.4 kcal/gram.

4. Experimental results

Our results show that 58 percent of subjects in the treatment group chose to remain ignorant of the calorie content of the meals they could choose from. This confirms our expectation as stated in Hypothesis 1, i.e. that people may choose to be ignorant, even when information is costless.

To test hypothesis 2, we selected those subjects in the control and treatment groups who chose the high-calorie meal in step 1, since they are the ones who would be expected to act on information, i.e. reduce their calorie intake either by switching to the low-calorie meal or consume less of the high-calorie meal. In the control group, 36/55 subjects chose the high-calorie meal in step 1 and in the treatment group 56/93 subjects chose the high-calorie meal in step 1. For those subjects in the control group, the average intake of calories was 558 calories. For those subjects in the treatment group who chose to be uninformed, the average intake of calories was 798 calories, an increase in the calorie intake that is significant at the 1 % level. We can therefore reject the null hypothesis and accept the alternative hypothesis, as stated by Hypothesis 2. We conclude that data supports the expectation of people being strategically self-ignorant.

The finding of strategic self-ignorance is supported by the answers subjects provided in the survey filled out during the experiment. When asked if they wanted information on calorie content in food at restaurants, only 9 out of 148 subjects answered “always” or “mostly”, while 139 subjects answered “sometimes” or “never”. Of those who did not always want calorie information, 59.7 percent answered that the reason for not wanting to know is that “I want to be able to enjoy the food without thinking about how it affects my weight”, which implies that utility of meal consumption would negatively be affected by the knowledge of calories in the meal.

5. Determinants of strategic self-ignorance

In dictator games, ignorance regarding the impact of a dictator’s financial decision on the observer seems to increase the more expensive it is for the dictator to be fair and decrease the bigger the losses are to the observer (van der Weele, 2011). Based on that finding, and, again, assigning today’s self the role as the dictator and tomorrow’s self the observer, we expect that the probability of strategic self-ignorance (1) increases the higher the immediate utility from the preferred consumption alternative, and (2) decreases the more negative the impact on one’s future self. The first expectation implies that the higher subject’s value the taste of the preferred meal, the lower the probability that they will choose to be informed (and thereby feel that they should reduce the intake of calories, either by switching to a low-calorie meal or reducing the intake of the high-calorie meal). The second expectation implies that the more of a negative impact unhealthy, or high-calorie, consumption may have on your future health, the lower the probability of choosing to be ignorant of the calorie content of food. We assume that people of poor health (i.e. who are at higher health risk) experience a more negative impact of eating many calories, measured by the level of BMI and general health.

To analyze the determinants of ignorance, we use a probit model where the choice to collect costless information on the meal calorie content is explained by (1) the expected taste score of the preferred meal, (2) BMI, and (3) subjective assessment of own health. Further, studies show that women and people with greater health knowledge and health interest more frequently use nutritional information (see e.g. Nayga, 1996; Cowburn and Stockley, 2005; Drichoutis et al., 2005). We therefore control for gender, health knowledge and health interest in the regression. Descriptive statistics of the variables in the probit model are found in Table 2.[10]

Results from the probit regression are found in Table 3 and average marginal effects are reported in Table 4. The expected taste score for the preferred meal is specified as a categorical variable in the regression, i.e. four dummy variables are created and the taste score of two is defined as the reference case. Hence, the average marginal effects for the different levels of the expected taste score represent the change in the probability to choose ignorance as the expected taste score increases from the base level 2.

The results reported in Table 3 are robust to different model specifications. First, we estimated a couple of alternative model specifications that entail different measures of body weight. We use actual BMI in the regression results reported in Table 2. Arguably, the *perception* of weight may be just as important as actual BMI in determining if subjects want to avoid nutritional information. In the background survey, we asked subjects to state their weight in one of the following categories: under, normal or over weight. Comparing their actual BMI with their reported weight category, we find that 32 out of the 147 subjects that reported their weight underestimate their own weight (typically believe they are normal weight, when they are really overweight). Only 5 subjects over estimated their weight. However, of the 32 subjects who under estimated their weight, 25 have an actual BMI that is less than two BMI units (and the majority has an actual BMI that is less than one BMI unit) from a cut off value to the next weight category. For instance; the subject believes he/she is normal weight, when data from our weight and height measurements suggest the subject has a BMI of 25.2. Since the deviation of the perceived weight category from the actual BMI is so small (25 is the cut off value for

[10] The probit regression is performed on the observations in the treatment group, and therefore descriptive statistics in Table 2 only refers to the treatment group. In order to determine how well the control group reflects the treatment group, though, we performed *t*-tests to analyze the difference in means of the variables in Table 2 between the control group and the treatment group. None of the *t*-tests imply that we can reject the null hypothesis of the means being equal for both groups.

overweight), it may be due to heavy clothes or a special diet that particular day. However, to formally analyze if these small deviations between actual and perceived weight category matter, we ran the probit regression as specified above and controlled for if the subjects under estimate their weight (note that the above regression only includes subjects in the treatment group - in the treatment group, 17 subjects out of 93 subjects underestimate their weight). The estimated coefficient for the dummy variable indicating that subjects underestimate their weight was positive (potentially suggesting that subjects that under estimate their weight are more likely to choose ignorance) but small (0.187) and not statistically significant (*p*-value= 0.666).[11] We also ran the probit regression with the perceived weight categories (normal weight being the reference case), instead of actual BMI. The estimated coefficient for perceived overweight (-0.316) suggested a negative impact from perceived overweight on choosing ignorance, but the effect is not statistically significant (*p*-value =0.394). The remaining results in Table 3 are stable to these various measures of weight.

Second, we estimated models that entailed exercising, in addition to the variables in Table 3. Exercising turns out not to have a significant effect on the probability to ignore information. We tried two different measures of exercising; either including total hours of exercising as a single variable, or separating hours of exercising into three different continuous variables, light exercising (e.g. house cleaning), medium exercising (e.g. power walks) and heavy exercising (sports). Third, we estimated a model entailing subjects' general preference for immediate reward, i.e. the importance subjects generally assign to taste when deciding on their lunch, instead of the expected taste score of their preferred lunch at the experiment occasion. We did so by replacing the expected taste score dummy variables with one dummy variable indicating that taste is the most important factor in deciding on lunch and another dummy variable indicating

[11] Interestingly, the data indicate that underestimating one's weight may enhance the intake of calories, though. A single regression of the effect of underestimating the weight on the number of calorie consumed (only entailing subjects in the control group, and no other explanatory variables) suggests that the number of calories consumed may be positively affected by subjects under estimating their weight (estimated coefficient: 136, *P*-value: 0.010). The interpretation would be that those subjects that under estimate their weight consume 136 more calories than those who correctly categorize their weight. This result is certainly distorted by omitted variables, but is worth exploring further in future research. For instance, can it be confirmed with a larger data set and appropriate explanatory variables? And do subjects choose to ignore not only nutritional information in order to be able to consume more calories (as suggested by the results in this paper), but also their true weight? If so, how is consumption affected if their weight beliefs are updated with their true weight?

that taste is the second most important factor. The estimated coefficients of both these dummy variables turned out positive (implying that the stronger the subjects' general preferences for immediate reward when deciding on lunch, the more likely they are to ignore free nutritional information), but not statistically significant. The pseudo R2 value drops from 0.22 to 0.20 with this model revision, though. The remaining results in the model are robust to these changes in the model.

As shown by table 4, the probability of ignoring costless information increases as the expected taste score for the preferred meal increases, i.e. subjects are more likely to ignore information the higher the immediate utility from the meal. This is in line with our prior expectations. The result is, however, only statistically significant (at the 10 percent level) as the expected taste score increases from 2 (the reference level) to 5: if the expected taste score increases from 2 to 5, the probability of choosing ignorance increases by 51 percentage points.

Further, Table 4 show that if the BMI increases by one unit, the probability to choose ignorance decreases by 2 percentage points. The result is statistically significant at the 10 percent level. This result is also in line with our prior expectations. The effect of improvements in the subjective assessment of one's own health is also in line with expectations, i.e. better health increases the probability of ignoring costless information, but it is not statistically significant.

6. Discussion

Classical expected-utility theory assumes that people always are better off collecting all available costless information. However, in this paper, we show that present-biased individuals face incentives to avoid evidence of the potentially negative impact of present actions on future wellbeing, in order to be able to pursue immediate gratification. We label such behavior 'strategic self-ignorance'. We test for strategic ignorance in an experiment entailing ready-meals of non-transparent calorie content (impact on future health). Our results imply that a majority of subjects (58 percent) choose ignorance of the calorie content and that ignorance leads to over consumption of calories. We therefore conclude that people are strategically self-ignorant.

Further, we explore the determinants of ignorance and find that the probability of choosing ignorance increases the higher the immediate utility from the activity (expected taste of preferred meal, in the experiment) and decreases the higher the potential negative impact on one's future self (here, we assume that having a poor health to start with increases the health risk associated with over consuming calories).

The finding of strategic self-ignorance may help explain research results implying little or no effect of information aimed at reducing harmful activities. For instance, Roberto et al. (2009) found that only 6 out of 4311 costumers at fast food restaurants looked at on-premises nutritional information, and several studies imply little or no effect on calorie consumption from legislated menu-labelling (Elbel et al., 2009; 2011, and Vadiveloo, 2011). Also, it might help explain certain behaviors associated with downward financial spirals. Consider, for instance, indebted households who choose not to open their bills or other statements of their financial situation. Avoiding information on their current financial situation will not change their financial situation, and it might worsen their long-term. However, ignorance might make them temporarily feel better, e.g. via reduced guilt, and thereby allow for continuous over spending. However, these and other behaviors that might be related to strategic self-ignorance remain issues for future research.

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Table 1

Variable	Mean	Std. Dev.	Min	Max	Number of observations
Age	39.950	12.704	20	61	139
Female	0.534	0.501	0	1	148
Highest education					
High School Education	0.338	0.475	0	1	142
University Education	0.465	0.501	0	1	142
Other Education	0.197	0.399	0	1	142
Income/month, in SEK					
≤ 10,000	0.102	0.304	0	1	147
10,001-20,000	0.327	0.471	0	1	147
20,001-30,000	0.286	0.453	0	1	147
30,001-40,000	0.122	0.329	0	1	147
>40,000	0.143	0.351	0	1	147
Body mass index	25.182	4.185	18	48	148

Table 2

Variable	Mean	Std. Dev.	Min	Max	Number of observations
No information	0.581	0.496	0	1	93
Female	0.538	0.501	0	1	93
Health knowledge	6.407	1.584	2	10	91
Health interest	9.330	5.077	-4	23	91
Health is good or very good	0.889	0.316	0	1	90
Health is not so good or bad	0.111	0.316	0	1	90
Taste score of preferred meal	3.935	0.656	2	5	93
Body mass index	25.097	3.909	18	35	93

Table 3

Variable	Coefficient	s.e.	*p*-value
Taste score preferred meal			
2 (reference level)	0	-	-
3	1.05	1.05	0.32
4	0.10	1.00	0.27
5	1.78	1.12	0.11
Body mass index	-0.07	0.04	0.08
Health very good or good	0.70	0.52	0.18
Female	-1.01	0.32	0.00
Health knowledge	-0.10	0.10	0.32
Health interest	-0.06	0.03	0.08
Constant	2.08	1.58	0.19

Note: Number of obs = 90, Log likelihood = -47.53725, LR chi2(8) = 26.83, Prob > chi2 = 0.0008, Pseudo R2 = 0.22

TABLE 4 **Tidy up and present as table.**

Average marginal effects Number of obs = 90

See previous version!

	Delta-method dy/dx	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Taste score preferred meal						
3	.3106885	.2666443	1.17	0.244	-.2119248	.8333018
4	.3229398	.2503461	1.29	0.197	-.1677295	.8136091
5	.5113269	.271686	1.88	0.060	-.021168	1.043822
bmi	-.0221054	.0122119	-1.81	0.070	-.0460402	.0018294
health very good or good	.2092081	.1519515	1.38	0.169	-.0886113	.5070275
female	-.3028863	.080458	-3.76	0.000	-.460581	-.1451915
health knowledge	-.0295877	.0293041	-1.01	0.313	-.0870227	.0278474
health interest	-.01801	.0098024	-1.84	0.066	-.0372224	.0012024

Note: dy/dx for factor levels is the discrete change from the base level.